Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Amended) A measuring apparatus (10) which consists of several assemblies, at least one of which comprises a force and/or moment sensor for measuring of positions or movements of two objects relative to one another, characterized in that it comprises:

– a conversion spring means (20) of biased springs which span an air gap which is defined by a certain distance of a first and a second assembly from a third assembly, with the first (12) and the second assembly (14) each comprising a printed circuit board and the force and/or moment sensor being elastically connected with one of the objects at least via the conversion spring means (20).

2. (Previously Amended) The measuring apparatus (10) according to Claim 1, characterized in that it comprises:

– a force and/or moment sensor with at least

– a first assembly (12) which is connected with one of the two objects,

– a second assembly (14) which is elastically connected with the first assembly (12) by at least one measuring spring means (18), and

– at least one optoelectronic measuring cell for measuring the position or movement of the

first (12) relative to the second assembly (14), and

– a third assembly (16) which is connected with the other one of the two objects and which is elastically connected with the second assembly (14) by the conversion spring means (20), with the position of the first assembly (12) relative to the third assembly (16) being changeable from outside, and the second assembly (14) assuming a position relative to the first assembly (12), which depends on the position of the third (16) relative to the first assembly (12).

3. (Previously Presented) The measuring apparatus (10) according to Claim 1,

characterized in that the third assembly (16) defines an interior space in which the first (12) and the second (14) assembly are arranged in such a manner that they are spaced from the third assembly (16) by the air gap.

4.(Previously Presented) The measuring apparatus (10) according to Claim 3,

characterized in that the conversion spring means (20) comprises a helical spring assembly which is preferably arranged in a rotation symmetrical fashion.

5. (Previously Amended) The measuring apparatus (10) according to Claim 2,

characterized in that the measuring spring means (18) comprises one of the following components or combinations thereof: helical spring (assembly), moulded elastomer part, moulded cast resin part.

6. (Previously Amended) The measuring apparatus (10) according to Claim 5,

characterized in that the measuring spring means (18) comprises three components arranged in a rotation symmetrical fashion.

7. (Previously Presented) The measuring apparatus (10) according to Claim 6,

characterized in that the first (12) and the second assembly (14) are essentially connected elastically with one another via the components of the measuring spring means (18).

8. Cancelled.

9. (Previously Amended) The measuring apparatus (10) according to Claim 7,

characterized in that at least one component of the measuring spring means (18) comprises at least one helical spring which is firmly connected with the first (12) and second assembly (14) by soldering.

10. (Previously Presented) The measuring apparatus (10) according to Claim 9,

characterized by at least one stop means (24) which limits the movement of the first assembly (12) relative to the second assembly (14).

11. (Previously Presented) The measuring apparatus (10) according to Claim 10,

characterized in that it comprises at least six optoelectronic measuring cells in order to detect movements or positions in six degrees of freedom.

12. (Previously Presented) The measuring apparatus (10) according to Claim 11,

characterized in that the optoelectronic measuring cells are located on the circumference of a circle and are preferably arranged in pairs of measuring cells lying one above the other, and the pairs being preferably arranged in a rotation symmetrical fashion.

13. (Previously Presented) The measuring apparatus (10) according to Claim 12,

characterized in that each optoelectronic measuring cell comprises a position sensitive detector (30) arranged in the beam path of a light emitting means (32) as well as a slit diaphragm (40) arranged in the beam path of the light emitting means (32) between the light emitting means (32) and the position sensitive detector (30), with the detector axis of the position sensitive detector being oriented perpendicularly to the slit direction of the slit diaphragm (40), and one element of a system consisting of light emitting means (32), slit diaphragm (40), and detector (30) being movable relative to the other two elements.

14. (Previously Amended) The measuring apparatus (10) according to Claim 13,

characterized in that the slit diaphragm (40) in each measuring cell is arranged either on the first (12) or on the second assembly (14), and the position sensitive detector (30) and the light

emitting means (32) are arranged together on the respective other one of the two previously mentioned assemblies (12, 14).

15. (Previously Presented) A force and/or moment sensor, characterized by the measuring apparatus (10) according to Claim 14.

16. (Previously Amended) A joystick characterized by

- one of a force and/or moment sensor or a measuring apparatus (10) according to Claim 15.

17. (Previously Presented) A means for measuring the relative positions or movements of two objects, comprising

- a force and/or moment sensor with a first sensor subunit (12) which is connected with a first one of the objects, as well as a second sensor subunit (14) which is coupled to the first sensor subunit (12) relative to same in a springy fashion by means of a first spring arrangement (18), in the following referred to as measuring spring arrangement, with the two sensor subunits (12, 14) each carrying part of measuring components (30, 32, 40) for measuring of relative positions or movements of the two sensor subunits (12, 14) and

- a second spring arrangement (20), in the following referred to as conversion spring arrangement, which is coupled to the second (16) of the objects relative to same in a springy fashion,

characterized in that the conversion spring arrangement (20) alone is coupled to the second sensor subunit (14) and the second object.

18. (Previously Presented) The means according to Claim 17, characterized in that the second object (16) forms an annular body in whose annular interior the force and/or moment sensor is arranged at a distance from the annular body.

19. (Previously Presented) The means according to Claim 18, characterized in that conversion spring arrangement (20) is formed by several conversion spring elements evenly distributed arranged in the direction of the annulus circumference, acting in parallel with each other.

20. (Previously Presented) The means according to Claim 19, characterized in that the conversion spring elements are formed as helical springs.

21. (Previously Presented) The means according to Claim 20, characterized in that the helical conversion springs are installed so as to be biased.

22. (Previously Presented) The means according to Claim 21, characterized in that the helical conversion springs extend radially with respect to an annulus axis of the annular body (16).

23. (Previously Presented) The means according to Claim 22, characterized in that the conversion spring arrangement (20) comprises a total of three conversion spring elements.

24. (Previously Presented) The means according to Claim 23, characterized in that in that the two sensor subunits (12, 14) each comprise a carrier disk for mounting at least parts of the measuring components, and that the two carrier disks are arranged axially spaced one above the other with respect to the annulus axis of the annular body (16) and coupled to each other by the measuring spring arrangement (18).

25. (Previously Presented) The means according to Claim 24, characterized in that the measuring components (30, 32, 40) of the force and/or moment sensor form six optoelectronic measuring cells for the detection of relative positions or movements of the two objects in six degrees of freedom, with each measuring cell being formed by an arrangement of a light emitting diode (32), a position sensitive detector (30), and a slit diaphragm (40) arranged in the beam path between the diode and the detector, with an axis of the detector being arranged perpendicularly to the slit direction of the slit diaphragm, and with one of the components: diode, detector, and slit diaphragm being arranged at one of the two sensor subunits (12, 14) while the two other ones of these components are arranged at the other sensor subunit.

26. (Previously Presented) A joystick with a measuring means according Claim 25.

27. (Withdraw) A measuring device, comprising:

a hollow member having an axis and defining a cavity;

a pair of axially spaced carrier plates disposed in the cavity generally parallel to each other

and generally orthogonal to the axis, the carrier plates disposed for movement relative to the hollow member and relative to each other;

an optoelectronic sensor assembly for detecting relative movement or relative positions of the carrier plates, the optoelectronic sensor assembly including a plurality of sensor components mounted to, and distributed between, the carrier plates;

a first spring assembly elastically coupling the carrier plates; and

a second spring assembly elastically coupling the hollow member and one of the carrier plates.

28. (Withdraw) The measuring device of claim 27, wherein the second spring assembly comprises one or more spring elements extending radially between the hollow member and the one of the carrier plates.

29. (Withdraw) The measuring device of claim 27, wherein the second spring assembly comprises a plurality of spring elements arranged at equal angular distances from each other about the axis.

30. (Withdraw) The measuring device of claim 27, wherein the second spring assembly comprises one or more helical springs.

31. (Withdraw) The measuring device of claim 27, wherein the second spring assembly comprises one or more elastomeric bodies.

32. (Withdraw) The measuring device of claim 27, wherein a spring constant of the first spring assembly is greater than a spring constant of the second spring assembly in at least one direction.

33. (Withdraw) The measuring device of claim 27, wherein the hollow member is an annular member.

34. (Withdraw) The measuring device of claim 27, wherein the optoelectronic sensor assembly includes a plurality of measuring cells, each measuring cell including a light-emitting element, a position-sensitive light-detecting element disposed in a beam path of the light-emitting element and a slit diaphragm disposed in the beam path between the light-emitting and light-detecting elements, wherein one of the light-emitting element, light-detecting element and slit diaphragm is mounted to a first of the carrier plates and the two others of the light-emitting element, light-detecting element and slit diaphragm are mounted to a second of the carrier plates.

35. (Withdraw) A measuring device, comprising:

a first member;

a second member disposed for movement relative to the first member;

a third member disposed for movement relative to the first and second members;

an optoelectronic sensor assembly for detecting relative movement or relative positions of the first and second members, the optoelectronic sensor assembly including a plurality of sensor

components mounted to, and distributed between, the first and second members;

wherein the first and second members are elastically coupled by one or more first spring elements and the second and third members are elastically coupled by one or more second spring elements.

36. (Withdraw) A joystick, comprising:

a housing including a hollow portion, the hollow housing portion defining a cavity;

a manipulating handle supported by the housing for movement relative thereto;

a pair of carrier members disposed in the cavity of the hollow housing portion, the carrier members disposed for movement relative to the housing and relative to each other, a first of the carrier members connected to the manipulating handle;

an optoelectronic sensor assembly for detecting relative movement or relative positions of the carrier members, the optoelectronic sensor assembly including a plurality of sensor components mounted to, and distributed between, the carrier members;

a first spring assembly elastically coupling the carrier members; and

a second spring assembly elastically coupling the hollow housing portion and a second of the carrier members.